

## 2013 International Passive House Conference Review

### Economically attractive solutions for the energy revolution

#### Passive House experts report on experiences with projects around the world



*Frankfurt, 2.5.2013.* "Passive House – a solid foundation for the energy revolution" – this was the motto under which more than a thousand experts on energy efficient construction gathered in Frankfurt, Germany on 19 and 20 April. Whether for sustainable refurbishments, intelligent building services or concepts for different climate regions, solutions from across the building sector

were presented at the 17th International Passive House Conference, thus quickly putting to rest the oft posed question of whether society can afford the Passive House Standard.

Far from being a luxury, this solution is ideal for widespread application. In Frankfurt, Germany, Passive House has firmly established itself on account of its cost-effectiveness. As Olaf Cunitz, Mayor and Chief Planning Officer of the City of Frankfurt explained during the Conference's opening plenary, the question is whether we can still afford to ignore this standard. This opinion is also shared by those in charge of the city's largest housing association. As the Director of ABG Holding Frankfurt GmbH, Frank Junker highlighted the positive results obtained from over 1600 Frankfurt apartments, all built to this energy-efficient building standard.



Prof. Wolfgang Feist illustrates Passive House efficiency in his presentation. Photo: PHI

Host of the international Conference, the City of Frankfurt am Main maintains its role as a Passive House leader. The nationalities of the participants as well as the subject matter of the presentations, however, clearly showed that this building standard has already become widely established internationally as well. Several EU funded projects have provided a major impetus for this. In addition to the Europeans in the audience, large delegations from North America and Asia were

also in attendance. "Documented experiences with built projects from around the world were the focus of many lectures and poster presentations," said Professor Wolfgang Feist, Director of the Passive House Institute.

Current trends in energy efficient building and results were discussed during the 16 working groups at the Congress Center in Frankfurt. One key theme was that of energy-efficient retrofits combined with renewable energies. In view of the growing number of construction projects outside of Central Europe, the demands placed on Passive House buildings in different climate regions were also on the agenda. Speakers presented results from projects in Estonia, Mexico, New Zealand and Sicily, among other regions across the globe.

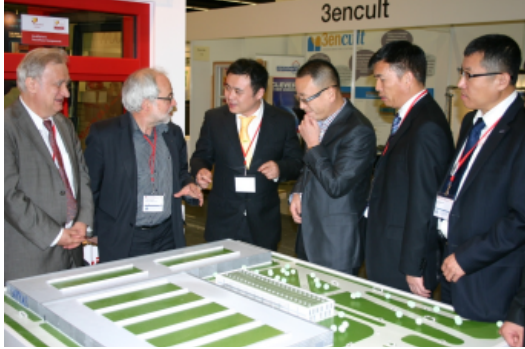
The topic of sustainability in construction received much attention at the Passive House Conference, where it was made clear that energy-efficiency is the indispensable basis for sustainable construction. The discussion surrounding this topic has been spurred, in part, by the European Buildings Directive, which aims to establish the "Nearly Zero Energy Building" as the future standard for new builds. Concepts such as the energy-plus house, or allegedly energy independent buildings were viewed critically by conference speakers. As stressed by Dr. Werner Neumann, Chief of the City of Frankfurt Department of Energy, Passive House with its low energy demand plays the key role at the heart of all such concepts.



Office building in Heidelberg's new Bahndtadt quarter. Photo: PHI

That this applies not only for single buildings, but also for entire city districts was demonstrated by Ralf Bermich and Robert Persch of the Environmental Authority in Heidelberg. On the premises of a former freight train station in this university city, the 116 hectare Bahnstadt

quarter is currently being built completely to the Passive House Standard. In a few years, it is estimated that some 12,000 people will be living and working in this new city district. In the medium term, energy will be supplied completely through renewable sources.



Model of the Passive House factory planned in the Chinese town of Harbin. Photo: PHI

A large-scale project of an entirely different kind was presented at the accompanying Passive House Exhibition in Hall 5.0 of the Congress Center: in the northern Chinese town of Harbin, the construction of the world's first Passive House factory building is being planned. A model of this impressive facility was available for viewing: 5,000 m<sup>2</sup> of office space and a 20,000 m<sup>2</sup> production hall are planned. "We are extremely pleased that

interest in Passive House is also increasing in those countries undergoing construction booms", says Professor Dr. Wolfgang Feist, Director of the Passive House Institute.

The fact that the Passive House Standard is increasingly becoming established in many regions is mainly due to the growing availability of high quality energy-efficient building components. Many of the latest components, ranging from windows that can withstand the demands of extremely cold climates and windows with particularly light multi-pane glazing to a variety of heat recovery ventilation units, were presented in the exhibition accompanying the Conference. Approximately 100 exhibitors displayed their high performance products in Frankfurt.



About 100 exhibitors demonstrated new products for energy-efficient construction at the exhibition held in parallel to the Conference. Photo: PHI

The application of such products in retrofits will be furthered by EuroPHit, an EU project



The kick-off meeting for EuroPHit – the new EU project on Passive House retrofitting. Photo: PHI

launched during the Conference. This project will see clear criteria defined for each of the steps in the retrofitting process with an eye to integrated design, ensuring that all disciplines involved are more closely linked with one another. "In this way we will be able to achieve the 'Nearly Zero Energy Building' in our building stock, step by step", says project coordinator Jan Steiger of the Passive House Institute.

In addition to these components, a prerequisite for the wide scale implementation of the Passive House is the availability of relevant training opportunities, both for architects as well as craftsmen. More than 3000 construction professionals have acquired the Certified Passive House Designer qualification since the first examination was offered in 2007. A similar training and certification scheme for Passive House Tradespeople was introduced by the Passive House Institute one year ago and is also being offered by external course providers. A number of certificates were officially presented to newly certified Passive House Tradespeople at the Conference while a forum for craftspeople complete with practical lectures gave in-depth information relating to this qualification.

The necessity for widespread implementation of efficiency measures in new builds and retrofits was also emphasised by the architects' initiative, "A new way of building in a time of climate change and energy transition." The memorandum, which can be signed online, affirms that construction not only influences utilisation and the design of the built environment, it also affects living conditions on earth. All those involved in the construction process must take responsibility for this – even if the necessary actions are not yet required by law or stipulated in regulations.



Presentation of the "A new way of building" memorandum by an international group of architects. Photo: PHI

More than a third of the energy consumed in Europe is used for running buildings, above all for heating. With Passive House technology, it is possible to reduce this consumption by 90%. The additional cost of investment can be compensated in just a few years by energy savings.

Improving the efficiency of buildings thus not only contributes to the energy revolution, but also constitutes an attractive investment opportunity for building owners.

Whereas the EuroPHit project was launched at the Passive House Conference, another EU project has already started to produce tangible results: PassREg – Passive House Regions with Renewable Energies. With its motto, "Building for the energy revolution," PassREg investigates frontrunner regions that have successfully implemented efficiency concepts on the basis of Passive House using renewable energies. The experiences gained and the solutions applied in these regions are being transferred to and adapted for regions across Europe. The latest developments were discussed by project partners during a meeting held just prior to the Passive House Conference while preliminary results were presented at the Conference.

"Efficiency is the key to the success of the energy revolution," explains Professor Dr. Wolfgang Feist. The reason is simple: energy not consumed in the first place doesn't have to be extracted from sources that are more or less problematic. "If we are able to increase the energy efficiency of buildings to Passive House level on a large scale, then sustainable energy supply will become possible, even with rising prosperity worldwide," says Feist.

Current successes achieved in energy-efficient construction could not have been possible without the work of motivated pioneers. This fact is traditionally acknowledged at the International Passive House Conference with the Pioneer Award. This year, the award went to a Zero-Energy House in Denmark that was built in the 1970s by Vagn Korsgaard and Torben Esbensen. To recognise modern day pioneers, a new competition, the 2014 Passive House Award, was announced. This award, funded in part by the EU through the PassREg project, will reward frontrunners worldwide in the form of single projects or entire regions relying, where sensible, on on-site or nearby renewable energy sources and built to Passive House principles. The award will be presented at the 2015 International Passive House Conference.



Excursion participants in front of the Schloßbomer Street refurbishment project. Photo: PHI



Passive House life in the city centre: excursion to the Scheffelhof townhouses. Photo: PHI

On Sunday 21 April, Conference participants had the opportunity to take part in excursions to successfully implemented Passive House examples in the Frankfurt region. A total of nine full-day tours with various key themes were offered. Exemplary retrofit projects and new builds were shown, including some of the numerous Passive House schools in Frankfurt. Several office buildings, terraced houses and social housing projects could also be viewed as part of the programme.

The Passive House Conference, organised by the Passive House Institute, has been taking place at various venues for the last 17 years. This is the second time that Frankfurt am Main has hosted the Conference, the first time being in 2009. Various workshops and seminars including a Passive House Basics Course for beginners and workshops for specialists such as window manufacturers also take place during the Conference framework programme, prior to the Conference itself. The 18th International Passive House Conference is planned for 25 and 26 April 2014 in Aachen, Germany.



The plenary session at the 2013 International Passive House Conference in Frankfurt.

Photo: PHI



Visitors to the Trade Fair receiving information at the Passive House Institute stand.

Photo: PHI

Further information regarding the International Passive House Conference can be found at: [www.passivehouseconference.org](http://www.passivehouseconference.org)

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# **17<sup>TH</sup> INTERNATIONAL PASSIVE HOUSE CONFERENCE 2013**